

WHAT YOU SHOULD KNOW ABOUT

TICKS

— **AND THE** —

DISEASES

THEY SPREAD IN

VERMONT

**BE
TICK
SMART**



PROTECT • CHECK • REMOVE • WATCH

 **VERMONT**
DEPARTMENT OF HEALTH

WHAT IS A TICKBORNE DISEASE?

Tickborne diseases are illnesses that can spread to humans by the bite of infected ticks. Ticks usually feed on the blood of animals, like mice, shrews, chipmunks and deer, but they will also feed on humans. When they bite, ticks can sometimes pass on bacteria, parasites or viruses that can make people sick.

In order to feed, a tick will wait on the tip of a blade of grass or the edge of a leaf with its front legs extended until a person brushes by. The tick will climb on and make its way to the skin where it can feed.

If left alone, a tick may feed on a person for several days. While it feeds, the tick will get larger as it fills up with blood. This is when diseases from the tick can be spread to humans. After feeding, the tick will drop off and continue through its life cycle.

WHAT TICKBORNE DISEASES ARE IN VERMONT?

LYME DISEASE

Lyme disease is the most commonly reported tickborne disease in Vermont. It is caused by bacteria called *Borrelia burgdorferi* that are spread by the bite of a blacklegged tick.

The symptoms of Lyme disease do not begin right away. It can take from 3 to 30 days after a tick bite before someone might feel sick. Lyme disease can cause fever, headache, joint pain and swelling, muscle aches and fatigue. One unique symptom of Lyme disease is the distinctive rash that often appears at the site of the tick bite and might look like a bull's eye, with a small circular rash surrounded by clear skin, which is surrounded by another circular rash.

Not all Lyme disease rashes look like a bull's eye. Some may appear as a solid rash, and some people with Lyme disease may not develop a rash at all.

Lyme disease can only be diagnosed by a health care provider. A Lyme disease diagnosis is based on symptoms, and blood tests can be helpful when used correctly. Lyme disease can be successfully treated with antibiotics. Timely diagnosis and treatment are very important to avoid further complications from this disease. Lyme disease that is not treated in a timely manner may go on to cause other serious symptoms.



WHAT TYPES OF TICKS IN VERMONT CAN SPREAD DISEASE?

Not all kinds of ticks spread diseases. There are over a dozen different types of ticks in Vermont, but only four are known to bite humans and spread diseases.

BLACKLEGGED TICK (*Ixodes scapularis*)



ADULT FEMALE



ADULT MALE



NYMPH

LONE STAR TICK (*Amblyomma americanum*)



ADULT FEMALE



ADULT MALE



NYMPH

AMERICAN DOG TICK (*Dermacentor variabilis*)



ADULT FEMALE



ADULT MALE



NYMPH

WOODCHUCK TICK (*Ixodes cookei*)



ADULT FEMALE



ADULT MALE



NYMPH

Ticks enlarged to show detail



1 INCH

2 INCH



ANAPLASMOSIS

Anaplasmosis is the second most commonly reported tickborne disease in Vermont. It is caused by bacteria called *Anaplasma phagocytophilum*. Like Lyme disease, anaplasmosis is spread to humans by the bite of a blacklegged tick.

Anaplasmosis can cause fever, muscle aches, headache, fatigue, nausea and vomiting. These symptoms usually begin 5 to 21 days after a tick bite. Unlike Lyme disease, anaplasmosis rarely causes a rash.

Anaplasmosis can be a severe illness, and many people diagnosed with it are hospitalized, and can have problems such as anemia, low white blood cell counts, low platelet counts and elevated liver enzymes. Anaplasmosis can be fatal.

Anaplasmosis can only be diagnosed through a blood test. Antibiotics can effectively treat and cure this illness.

BABESIOSIS

Babesiosis is a disease caused by a parasite called *Babesia microti* that is spread by the bite of a blacklegged tick. Babesiosis is not as common in Vermont as Lyme disease or anaplasmosis, but it can be a serious, and sometimes fatal, disease.

Symptoms include fever, chills, sweats, headache, body aches, loss of appetite or fatigue. Anyone can get infected, but some groups of people are at risk for severe illness including those with weak immune systems or other health problems, older adults, or people without a spleen.

Babesiosis can be diagnosed by a health care provider based on symptoms and blood tests. It can be treated effectively, but requires different medicines than those used to treat Lyme disease or anaplasmosis.

BORRELIA MIYAMOTOI

***Borrelia miyamotoi* are bacteria that were recently recognized to cause tickborne disease.**

This disease is transmitted to humans by the blacklegged tick. It causes fever, chills, muscle aches, fatigue, joint pain and headaches. *Borrelia miyamotoi* infections can be diagnosed using blood tests, and can be successfully treated with antibiotics.



EHRlichiosis

In Vermont, ehrlichiosis is caused by bacteria called *Ehrlichia chaffeensis* that are spread through the bite of a lone star tick.

The symptoms of ehrlichiosis often include fever, chills, headache, muscle pain, nausea, vomiting, diarrhea, malaise, confusion, eye redness and a rash. The rash is more commonly seen in children than adults.

Diagnosis is often done based on symptoms, with a laboratory test used later to confirm the diagnosis. Ehrlichiosis can be a serious and sometimes fatal disease, but it can be treated successfully with antibiotics.

POWASSAN VIRUS DISEASE

Powassan virus disease can be spread by both the blacklegged and woodchuck tick. It may be passed to humans quickly during a tick bite, potentially in as little as 15 minutes, and symptoms may begin within a month. Reported cases of Powassan virus disease are rare in Vermont.

Symptoms include fever, headache, weakness, vomiting, confusion, seizures and memory loss. Powassan virus infections can be serious and often require hospitalization. Diagnosis is through laboratory testing, and there is no specific treatment for Powassan virus disease.

TULAREMIA

Tularemia is another rare disease in Vermont. It is caused by bacteria called *Francisella tularensis* that can be spread several ways including through tick and deer fly bites. Two ticks found in Vermont can spread this disease to humans: the American dog tick and the lone star tick.

When spread by ticks, tularemia can cause fever, an open sore at the site of the tick bite and swollen lymph nodes. The illness can range from mild to fatal. Tularemia is diagnosed with a blood test, and can be treated with antibiotics.

Between 2013 and 2016, **over half** of blacklegged ticks collected in Vermont tested positive for one or more tickborne diseases.

SPOTTED FEVER RICKETTSIOSIS

The Health Department receives a small number of reports each year of Vermonters diagnosed with spotted fever group rickettsioses, a group of diseases caused by similar types of bacteria. These diseases are likely transmitted in Vermont by the American dog tick.

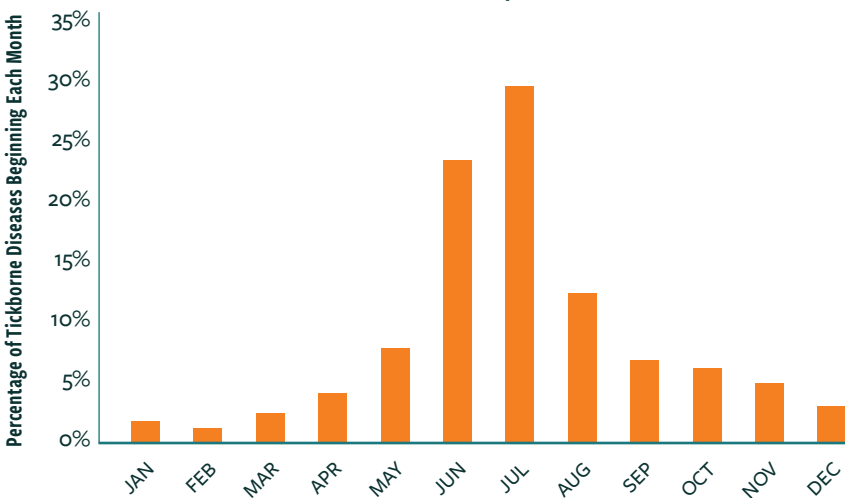
Spotted fevers can cause illnesses that range from mild to life-threatening. Symptoms include fever, headache, rash and a dark scab at the site of the tick bite. Blood tests are helpful in diagnosing spotted fevers, and antibiotics can effectively treat these diseases.

SEASONAL TRENDS

Ticks might be looking for a meal any time the temperature is above freezing, so people can get a tickborne disease during any month of the year in Vermont. However, the risk rises and falls throughout the seasons as a tick goes through its life cycle.

In Vermont, the risk is highest in the spring and early summer when ticks in the nymph stage are active and looking for a blood meal. The risk decreases after July, but remains elevated until the colder winter months.

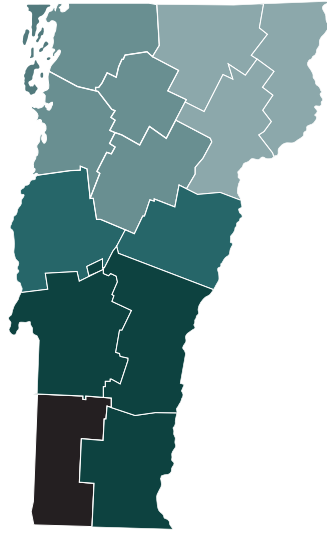
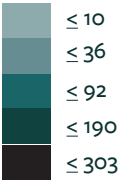
Seasonal Trend of Tickborne Diseases Reported in Vermont, 2008-2016



WHERE IN VERMONT?

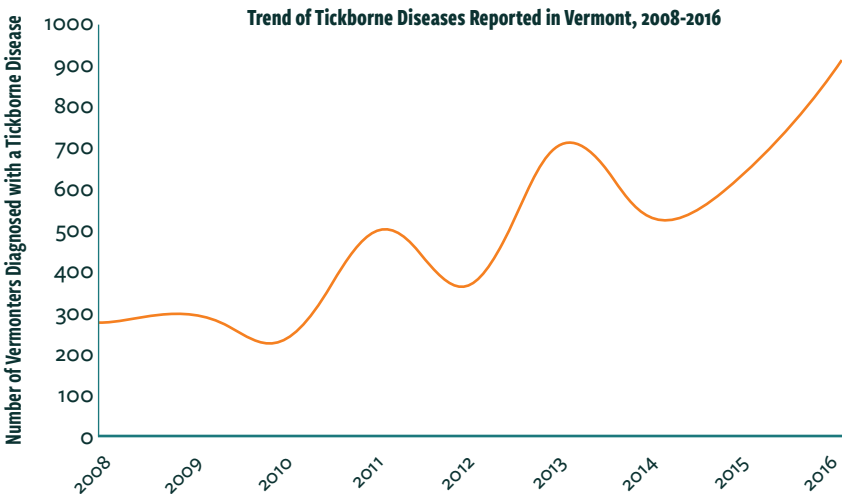
Vermonters from every county are at risk for tickborne diseases, but people living in the southern part of the state are at greater risk than others.

Tickborne Disease Incidence
(per 100,000)



INCREASING TRENDS

The number of cases reported in Vermont has increased over the last several years. This trend is likely due to several factors including changes in the landscape and wildlife community, the geographic spread of ticks and climate-related factors. Greater awareness by the public and the health care community, as well as increased testing and reporting, may also play a role.



HOW CAN I PREVENT TICKBORNE DISEASES?

The best way to prevent tickborne diseases is to prevent tick bites.

PROTECT

- Avoid wooded and brushy areas with high grass and leaf litter. Stay in the middle of trails where the path is clear.
- Wear long pants and long-sleeved shirts to minimize skin exposure to ticks.
- Tuck your pants into your socks to form a barrier that keeps ticks out.
- Wear light-colored clothing so you can easily spot ticks.
- Use effective tick repellents on your skin and clothing.

WHICH REPELLENTS SHOULD I USE?

Use repellents that are registered by the Environmental Protection Agency (EPA). They have been evaluated for safety and effectiveness. Follow the instructions on the label.

DEET is effective against ticks and has been used safely for many years.

- DO NOT use DEET on infants younger than 2 months old.
- DO NOT use DEET in concentrations greater than 30%.
- DEET is safe for children in concentrations up to 30%.

Other active ingredients that may be effective against ticks:

- Picaridin
- Oil of lemon eucalyptus
- IR3535

To find the tick repellent that is right for you,
use the following tool at the EPA's website:

<http://cfpub.epa.gov/oppref/insect/index.cfm>





FOR USE ONLY ON CLOTHING

Permethrin is an insecticide and insect repellent that can be used on clothing, shoes, socks, and camping gear, but should never be applied to skin. Clothing treated with 0.5% permethrin repels and kills ticks even after washing. Permethrin can be applied to existing clothing or pre-treated clothing can also be purchased.

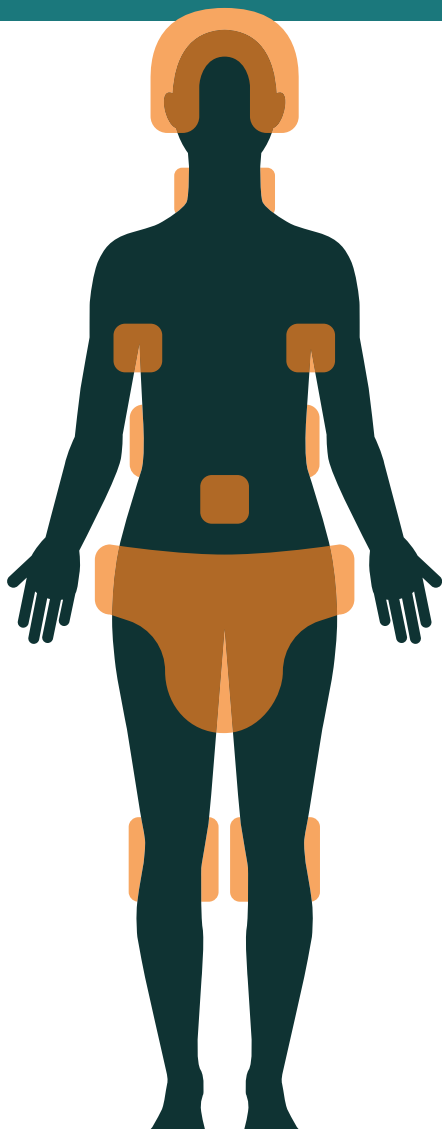
CHECK

- Check for ticks after spending time outdoors. Remember, ticks may be as small as a poppy seed.
- Shower within a few hours of being outside.
- Put your clothes in the dryer on high heat for 10 minutes to kill any ticks.
- Check your body for ticks, and check your children.

2

PAY SPECIAL ATTENTION TO:

- ✓ Scalp & neck
- ✓ Ears
- ✓ Back
- ✓ Underarms
- ✓ Belly button
- ✓ Waist & hips
- ✓ Pelvic area & between legs
- ✓ Behind knees

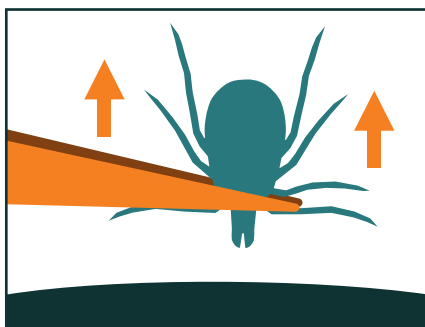
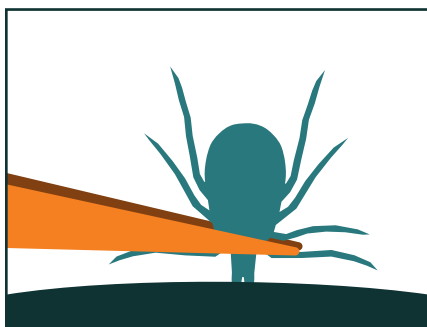


REMOVE

Remove the tick as soon as you discover it. Prompt removal can reduce your risk of tickborne disease.

TO SAFELY REMOVE TICKS:

- Use fine-tipped tweezers and firmly grasp the tick close to the skin. Avoid touching the tick with your bare hands.
- With a steady motion, pull straight up until the tick is removed. Do not twist the tick. Try not to squeeze the body of the tick.
- Do not be alarmed if the tick's mouthparts stay in the skin. Once the mouthparts are removed from the rest of the tick, it can no longer spread disease.
- Dispose of a live tick by putting it in alcohol, placing it in a sealed bag/container, wrapping it tightly in tape or flushing it down the toilet. Never crush a tick with your fingers.
- After removing the tick, wash your hands with soap and water or use an alcohol-based hand sanitizer if soap and water are not available. Clean the tick bite with soap and water, or use an antiseptic such as iodine scrub or rubbing alcohol.



With a steady motion, pull straight up until the tick is removed.

WATCH

Monitor your health in the days and weeks after the tick bite. Be on the lookout for common symptoms of tickborne diseases such as fever, headache, muscle aches and fatigue. If you have these or other symptoms, contact your health care provider. Be sure to tell him/her about your tick bite.





DO NOT USE PETROLEUM JELLY, A HOT MATCH, NAIL POLISH, OR OTHER PRODUCTS TO REMOVE A TICK.

SHOULD I GET THE TICK TESTED?

The Health Department does not recommend that you test ticks that have been removed from your skin.

- It might delay treatment. Tick testing can take several days, and results may not be available to make a timely treatment decision.
- You may have had more tick bites than you realized. If you found one tick and it tests negative, you could still have been bitten by another tick. Your negative tick test could give you a false sense of security.
- You may not have been infected. Even if a tick tests positive, it may not have been attached long enough to spread the infection, and you may not get sick.
- Tests done on ticks are not always perfect. All laboratory tests have the possibility of false positive or false negative results.

For more information
about ticks and tickborne
diseases, visit our website
HEALTHVERMONT.GOV

BE TICK SMART



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